Abstract

As a result of the changes that occur during their use, lubricating oils from automobiles tend to differ in terms of their physical and chemical composition from virgin and used lubricating oils. The analyses of the heavy metals distribution, contaminants and physicochemical parameters of the virgin and used lubricating oils will guide us to select the possible processes that can alter the oil composition. This research examines the heavy metals distribution, contaminants and physicochemical parameters of the virgin and used lubricating oils using Atomic Adsorption Spectrometer for 7 elements using various ASTM D methods. The results obtained shows that there were significant differences in the virgin and used lubricating oils. The deleterious effects of heavy metals, contaminants and physicochemical parameters on the environment have been known for a while. These contaminants not only cause environmental problems, they also have bio-accumulation effects on living organism, poisoning and fouling of catalyst as well as corrode processing equipment. This study also presents results showing us that contaminants, heavy metals and physicochemical parameters play a major role in discriminating of lubricating

oil samples.

Keywords: Heavy Metals, Physicochemical, Oil Analysis, Contaminants, Lubricating Oils